

Glass that Goes beyond Glass
ガラスを超えるガラス

Tough
強 さ

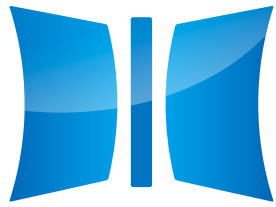
Thin
薄 さ

Light
軽 さ

Coating
成 膜

超薄板ガラス-樹脂積層体

Ultra-thin Glass Laminated on Resin



Lamion™

— 軽 さ でガラスの、その先へ! —

Lighter than Conventional Glass!

Light

GLASS FOR FUTURE



日本電気硝子

ガラスと樹脂のハイブリッド材料で、より軽く!

Light Hybrid Material, Combining Glass and Resin!

これまでになかった複合材料Lamion™とは?

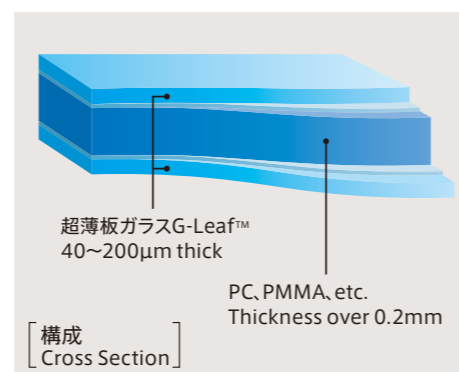
Lamion™は樹脂の両面に超薄板ガラスG-Leaf™を貼り合わせた複合材料。耐擦傷性やガスバリア性といった「ガラスの利点」と、軽量性やフレキシブル性といった「樹脂の利点」を上手に組み合わせたハイブリッド材料です。

※G-Leaf™は、厚さ0.2mm(200μm)以下の当社の超薄板ガラスの総称です。

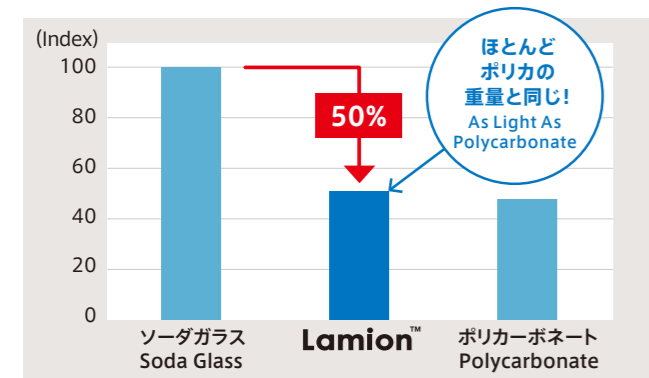
What is Lamion™ ?

Lamion™ is a composite material of resin with ultra-thin glass G-Leaf™ affixed to both sides. Advantages of glass such as high abrasion resistance and excellent gas-barrier performance, and the advantages of resin such as light weight and flexibility, are successfully combined in this hybrid material.

※G-Leaf™ is our ultra-thin glass which is under 0.2mm(200μm) thick.



強く、軽い。Lamion™採用のメリット



Weight Comparison

同じ厚さのガラスに比べて約50%の軽量化に成功。その上、傷や衝撃、変色に強いため、樹脂では難しかった分野の新材料として注目されています。

Merits of Introducing Tough and Light Lamion™

Lamion™ is successfully made about 50% lighter than other common glass with the same thickness. It is also highly resistant to scratches, shocks, and discoloration, attracting attention as a new material for purposes that were difficult to meet with resin alone.

軽さに加え、衝撃や傷に強い

衝撃を受けても樹脂が衝撃を吸収するため割れにくく、たとえ割れても飛散しません。また、ガラスならではの傷への強さもあります。安全・防犯分野への適用も可能です。

Not only Light but also Resistant to Impact Shocks and Scratches

Lamion™ is hard to break if it gets a shock because the shock is absorbed by the resin, and it will not scatter even if it does break. It is also resistant to scratches thanks to its glass-like nature. It would be able to applied to the security and the prevention of crime.

Result of Shock Test



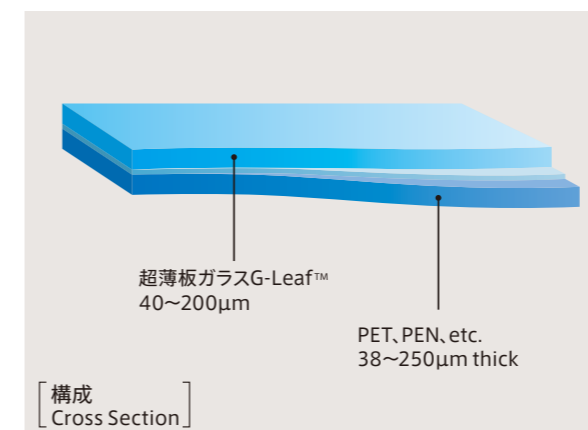
独自の複合化技術で樹脂と置き換わる新材料
Our Unique Technique Enables the New Material to Replace Resin

しなやかに曲がる。Lamion™フレキシブルタイプ

超薄板ガラスG-Leaf™を片面のみに貼り合わせた、Lamion™フレキシブルタイプもあります。ガスバリア性や耐擦傷性などガラスならではの性質と、フレキシブル性を持ち合わせる高性能材料です。

Flexibly Bendable: Lamion™ Flexible Type

We have Lamion™ Flexible Type, a sophisticated material with the ultra-thin glass G-Leaf™ affixed on just one side. This is providing both of the characteristics of glass of excellent gas barrier performance and abrasion resistance, as well as flexibility.



広がる用途 Broad uses

| | | | | | |
|--|---|--|---|--|---|
| | デジタルサイネージカバー Display cover for digital signage | | プラットフォームドア Lightweight window and door | | 防犯ショーケース Showcase for crime prevention |
| | OLED照明 OLED lighting | | セキュリティゲート Security gate | | 手すりフェンス Lightweight partition |

ガラス成膜技術 — ガラスの用途や可能性の追求

ガラスに各種機能膜 (ITO、反射防止、アンチグレア、防汚など) を施すこともできます。さらに、紫外線や赤外線だけをカットするなど、あらゆる分野への応用も可能。豊富なガラス材質や形状に成膜技術を加え、ガラスの可能性を最大限に生かした高付加価値ガラス材料を提供し、今後も新たな用途に対応していきます。

Glass Coating Technology — Pursuing Possibilities in Glass Uses

Coating with various functions (ITO, Anti-Reflection, Anti-Glare and Anti-Fingerprint) can be added to the glass. Application for various purposes, such as cutting only ultraviolet rays or infrared rays, is also available. By adding the coating technologies to an abundant range of glass materials and shapes, we will provide high value-added glass materials that can satisfy various new purposes.



普通のガラス(左)、反射防止膜付きLamion™(右)
Bare glass (Left),
Anti-Reflection coated Lamion™ (Right)

■特性比較 Comparison of Properties

| | 軽量性 Lightweight | 曲げ剛性 Bending rigidity | 耐擦傷性 Abrasion resistance | 耐衝撃・耐貫通性 Shock resistance, Anti-penetrability | 飛散防止性 Shatter resistance | 難燃性 Incombustibility | 耐候性 Weather resistance | 遮音性 Sound insulating | 帯電性 Electrostatic property | ガスバリア性 Gas barrier properties | フレキシブル性 Flexibility | 質感 Texture |
|---------------------------|--------------------|--------------------------|-----------------------------|--|-----------------------------|-------------------------|---------------------------|-------------------------|-------------------------------|----------------------------------|------------------------|---------------|
| Lamion™ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ◎ | ○ | ◎ |
| ポリカーボネート Polycarbonate | ○ | — | — | ◎ | ◎ | — | — | ○ | — | — | ◎ | — |
| ソーダガラス Soda glass | — | ◎ | ○ | — | — | ◎ | ○ | — | ○ | ◎ | — | ◎ |

◎ = Excellent ○ = Good

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